Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Amended): ~~A~~ An isolated nucleic acid molecule comprising a nucleic acid sequence which encodes a polypeptide selected from any one of:

(a) SEQ ID No: 14

(b) an immunogenic fragment comprising at least ~~12~~ 20 consecutive amino acids from SEQ 14; and

(c) a polypeptide of (a) or (b) which has been modified without loss of immunogenicity, wherein said modified polypeptide is at least 75% identical in amino acid sequence to the corresponding polypeptide of (a) or (b).

Claim 2 (Amended): ~~A~~ An isolated nucleic acid molecule comprising a nucleic acid sequence selected from any one of:

(a) SEQ ID No: 6;

(b) a sequence which encodes a polypeptide encoded by SEQ ID No: 6;

(c) a sequence comprising at least 38 consecutive nucleotides from any one of the nucleic acid sequences of (a) and (b); and

(d) a sequence which encodes a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 6.

Claim 3 (Amended): ~~A~~ An isolated nucleic acid molecule comprising a nucleic acid sequence which is anti-sense to the nucleic acid molecule of claim 1.

Claim 4 (Amended): ~~A~~ An isolated nucleic acid molecule comprising a nucleic acid sequence which encodes a fusion protein, said fusion protein comprising a first polypeptide and a second polypeptide, wherein the first polypeptide is selected from any one of:

(a) SEQ ID No: 14;

(b) an immunogenic fragment comprising at least ~~12~~ 20 consecutive amino acids from a polypeptide of SEQ ID No: 14; and

(c) a polypeptide of (a) or (b) which has been modified without loss of immunogenicity, wherein said modified polypeptide is at least 75% identical in amino acid sequence to the corresponding polypeptide of (a) or (b).

Claim 5 (Original): The nucleic acid molecule of claim 4 wherein the second polypeptide is a heterologous signal peptide.

Claim 6 (Original): The nucleic acid molecule of claim 4 wherein the second polypeptide has adjuvant activity.

Claim 7 (Previously presented): The nucleic acid molecule of claim 1, operatively linked to one or more expression control sequences.

Claim 8 (Amended): A ~~vaccine comprising a~~ vaccine vector ~~and~~ comprising at least one first nucleic acid selected from any of:

(i) SEQ ID No: 6;

(ii) a nucleic acid sequence which encodes a polypeptide encoded by SEQ ID No: ~~14~~ 6;

(iii) a nucleic acid sequence comprising at least 38 consecutive nucleotides from any one of the nucleic acid sequences of (i) and (ii);

(iv) a nucleic acid sequence which encodes a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by ~~any one of~~ SEQ ID No: 6;

(v) a nucleic acid sequence which encodes a polypeptide whose sequence is set forth in SEQ ID No: 14;

(vi) a nucleic acid sequence which encodes an immunogenic fragment comprising at least ~~12~~ 20 consecutive amino acids from SEQ ID No: 14;

(vii) a nucleic acid sequence which encodes a polypeptide as defined in (i) to (v) or an immunogenic fragment as defined in (vi) which has been modified without loss of immunogenicity, wherein said modified polypeptide or fragment is at least 75% identical in amino acid sequence to the corresponding polypeptide of (i) to (v) or the corresponding fragment of (vi);

wherein each first nucleic acid is capable of being expressed.

Claim 9 (Amended): A ~~vaccine comprising a~~ vaccine vector ~~and~~ comprising at least one first nucleic acid encoding a fusion protein, wherein the fusion protein comprises:

(a) a first polypeptide selected from any of:

(i) a polypeptide encoded by SEQ ID No: 6;

(ii) a polypeptide encoded by a nucleic acid sequence comprising at least 38 consecutive nucleotides from SEQ ID No: 6;

(iii) a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 6;

(iv) a polypeptide whose sequence is set forth in SEQ ID No: 14;

(v) an immunogenic fragment comprising at least ~~12~~ 20 consecutive amino acids from SEQ ID No: 14; and

(vi) a polypeptide as defined in (i) to (iv) or an immunogenic fragment as defined in (v) which has been modified without loss of immunogenicity, wherein said modified polypeptide or fragment is at least 75% identical in amino acid sequence to the corresponding polypeptide of (i) to (iv) or the corresponding fragment of (v); and

(b) a second polypeptide;

wherein each first nucleic acid is capable of being expressed.

Claim 10 (Amended): The vaccine vector of claim 9 wherein the second polypeptide is a heterologous signal peptide.

Claim 11 (Amended): The vaccine vector of claim 9 wherein the second polypeptide has adjuvant activity.

Claim 12 (Amended): The vaccine vector of claim 8 wherein each first nucleic acid is operatively linked to one or more expression control sequences.

Claim 13 (Amended): The vaccine vector of claim 8 wherein each first nucleic acid is expressed as a polypeptide, and wherein the vaccine vector further comprises a second nucleic acid encoding an additional polypeptide which enhances the immune response to the polypeptide expressed by the first nucleic acid.

Claim 14 (Amended): The vaccine vector of claim 13 wherein the second nucleic acid encodes an additional *Chlamydia* polypeptide.

Claim 15 (Previously presented): A pharmaceutical composition comprising the nucleic acid of claim 1 and a pharmaceutically acceptable carrier.

Claim 16 (Amended): A pharmaceutical composition comprising the vaccine vector of claim 8 and a pharmaceutically acceptable carrier.

Claim 17 (Original): A unicellular host transformed with the nucleic acid molecule of claim 7.

Claim 18 (Amended): An isolated nucleic acid probe of 5 to 100 nucleotides which hybridizes under stringent conditions to the nucleic acid molecule of SEQ ID No: 6, or to a complementary or anti-sense sequence of said nucleic acid molecule, wherein the stringent conditions comprise hybridizing (i) 4 to 16 hours at 42°C, in 6 x SSC containing 50% formamide, or (ii) 4 to 16 hours at 65°C in an aqueous 6 x SSC solution (1 M NaCl, 0.1 M sodium citrate (pH 7.0)).

Claim 19 (Amended): An isolated primer of 10 to 40 nucleotides which hybridizes under stringent conditions to the nucleic acid molecules of SEQ ID No: 6, or to a complementary or anti-sense sequence of said nucleic acid molecule, wherein the stringent conditions comprise hybridizing (i) 4 to 16 hours at 42°C, in 6 x SSC containing 50% formamide, or (ii) 4 to 16 hours at 65°C in an aqueous 6 x SSC solution (1 M NaCl, 0.1 M sodium citrate (pH 7.0)).

Claim 20 (Amended): ~~A~~ An isolated polypeptide encoded by the nucleic acid sequence of claim 2.

Claim 21 (Amended): ~~A~~ An isolated polypeptide comprising an amino acid sequence selected from any of:

(a) SEQ ID No: 14;

(b) an immunogenic fragment comprising at least ~~12~~ 20 consecutive amino acids from SEQ 14; and

(c) a polypeptide of (a) or (b) which has been modified without loss of immunogenicity, wherein said modified polypeptide is at least 75% identical in amino acid sequence to the corresponding polypeptide of (a) or (b).

Claim 22 (Amended): A fusion ~~polypeptide~~ protein comprising a first polypeptide and a second polypeptide, wherein the first polypeptide is selected from any one of:

(a) a polypeptide encoded by SEQ ID No: 6;

(b) a polypeptide encoded by a nucleic acid sequence comprising at least 38 consecutive nucleotides from SEQ ID No: 6;

(c) a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 6;

(d) a polypeptide whose sequence is set forth in SEQ ID No: 14;

(e) an immunogenic fragment comprising at least ~~12~~ 20 consecutive amino acids from SEQ ID No: 14; and

(f) a polypeptide as defined in (a) to (d) or an immunogenic fragment as defined in (e) which has been modified without loss of immunogenicity, wherein said modified polypeptide or fragment is at least 75% identical in amino acid sequence to the corresponding polypeptide of (a) to (d) or the corresponding fragment of (e).

Claim 23 (Previously presented): The fusion protein of claim 22 wherein the second polypeptide is a heterologous signal peptide.

Claim 24 (Previously presented): The fusion protein of claim 22 wherein the second polypeptide has adjuvant activity.

Claim 25 (Previously presented): A method for producing the polypeptide of claim 20, comprising the step of culturing a unicellular host transformed with a nucleic acid encoding the polypeptide of claim 20.

Claim 26 (Previously presented): An antibody against the polypeptide of claim 20.

Claim 27 (Amended): A vaccine comprising at least one first polypeptide selected from any of:

(i) a polypeptide encoded by SEQ ID No: 6;

(ii) a polypeptide encoded by a nucleic acid sequence comprising at least 38 consecutive nucleotides from SEQ ID No: 6;

(iii) a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 6;

(iv) a polypeptide whose sequence is set forth in SEQ ID No: 14;

(v) an immunogenic fragment comprising at least ~~12~~ 20 consecutive amino acids from SEQ ID No: 14; and

(vi) a polypeptide as defined in (i) to (iv) or an immunogenic fragment as defined in (v) which has been modified without loss of immunogenicity, wherein said modified polypeptide or fragment is at least 75% identical in amino acid sequence to the corresponding polypeptide of (i) to (iv) or the corresponding fragment of (v).

Claim 28 (Previously presented): A vaccine comprising at least one fusion protein, wherein the fusion protein comprises:

(a) a first polypeptide selected from any of:

(i) a polypeptide encoded by SEQ ID No: 6;

(ii) a polypeptide encoded by a nucleic acid sequence comprising at least 38 consecutive nucleotides from SEQ ID No: 6;

(iii) a polypeptide which is at least 75% identical in amino acid sequence to the polypeptide encoded by SEQ ID No: 6;

(iv) a polypeptide whose sequence is set forth in SEQ ID No: 14;

(v) an immunogenic fragment comprising at least ~~12~~ 20 consecutive amino acids from SEQ ID No: 14; and

(vi) a polypeptide as defined in (i) to (iv) or an immunogenic fragment as defined in (v) which has been modified without loss of immunogenicity, wherein said modified polypeptide or fragment is at least 75% identical in amino acid sequence to the corresponding polypeptide of (i) to (iv) or the corresponding fragment of (v); and

(b) a second polypeptide.

Claim 29 (Original): The vaccine of claim 28 wherein the second polypeptide is a heterologous signal peptide.

Claim 30 (Original): The vaccine of claim 28 wherein the second polypeptide has adjuvant activity.

Claim 31 (Previously presented): A vaccine comprising at least one first polypeptide according to claim 20 and an additional polypeptide which enhances the immune response to the first polypeptide.

Claim 32 (Previously presented): The vaccine of claim 31 wherein the additional polypeptide comprises a *Chlamydia* polypeptide.

Claim 33 (Previously presented): A pharmaceutical composition comprising the polypeptide of claim 20 and a pharmaceutically acceptable carrier.

Claim 34 (Previously presented): A pharmaceutical composition comprising the vaccine of claim 27 and a pharmaceutically acceptable carrier.

Claim 35 (Previously presented): A pharmaceutical composition comprising the antibody of claim 26 and a pharmaceutically acceptable carrier.

Claims 36-39 (Canceled)

Amendments to the Drawings:

The attached sheets of drawings (numbered 1/77 - 72/77) includes revisions to the labeling of Figures 1-10, and replaces the original sheets (also numbered 1/77 - 72/77).

Attachment: Replacement sheets
Annotated sheets showing changes